**2020 Fall Math 229 Final - Due 12.18 Friday**

# Archer Hernandez,Sean L.

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

9.0000 9.5000 10.0000
```

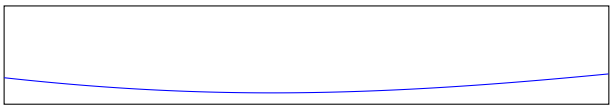
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

9.0000 9.5000 10.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [9,10]

$$y = \sin^2 \frac{89}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 89 = 0$.

```
>> format short
>> roots(                              )

ans =

1.5568 + 1.0914i
1.5568 - 1.0914i
-0.5257 + 1.7663i
-0.5257 - 1.7663i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{89 \arccos x}{100\sqrt{1-x}}$$

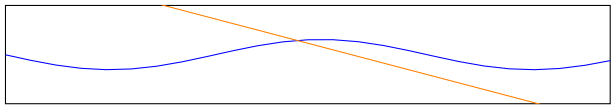
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.269382089861457
0.990000000000000 1.259701312587402
0.999000000000000 1.258754981624645
0.999900000000000 1.258660559498646
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 89$$

over the interval [11,14] on the same graph.

```
>> x = linspace(11,14);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 89$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{89}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{89}{x}$.

f.m

```
function y = f(x)
                                    ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -3.632653061224467
0.010000000000000 -3.567134268536875
0.001000000000000 -3.560712142430588
0.000100000000000 -3.560071201391679
0.000010000000000
```

**10**. Find $R_2$, the Regular Right Sum with 2 rectangles, in order to approximate

$$\int_9^{10} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

# 2020 Fall Math 229 Final - Due 12.18 Friday

# Belli,Erenik

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

9.0000 10.0000 11.0000 12.0000 13.0000
```

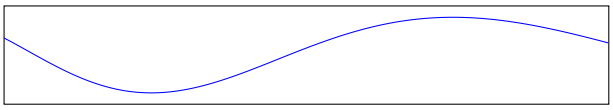
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :      

ans =

9.0000 10.0000 11.0000 12.0000 13.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [9,13]

$$y = \sin^2 \frac{94}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 94 = 0$.

```
>> format short
>> roots(                          )

ans =

1.5733 + 1.1035i
1.5733 - 1.1035i
-0.5320 + 1.7858i
-0.5320 - 1.7858i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{94 \arccos x}{100\sqrt{1-x}}$$

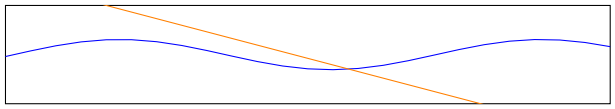
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.340695690415471
0.990000000000000 1.330471049249616
0.999000000000000 1.329471553626030
0.999900000000000 1.329371826886210
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 94$$

over the interval [12,15] on the same graph.

```
>> x = linspace(12,15);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 94$ to 1 decimal place.

$x =$ 

## Let $f(x) = \dfrac{94}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{94}{x}$.

f.m

```
function y = f(x)
                                ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -3.836734693877517
0.010000000000000 -3.767535070140226
0.001000000000000 -3.760752150430590
0.000100000000000 -3.760075201491019
0.000010000000000
```

**10**. Find $R_4$, the Regular Right Sum with 4 rectangles, in order to approximate

$$\int_9^{13} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

**2020 Fall Math 229 Final - Due 12.18 Friday**

# Calaguas,Isah

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

5.0000 9.5000 14.0000
```

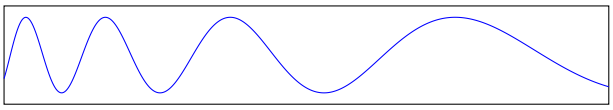
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>      :      :

ans =

5.0000 9.5000 14.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [5,14]

$$y = \sin^2 \frac{92}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 92 = 0$.

```
>> format short
>> roots(                              )

ans =

1.5668 + 1.0987i
1.5668 - 1.0987i
-0.5295 + 1.7781i
-0.5295 - 1.7781i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{92 \arccos x}{100\sqrt{1-x}}$$

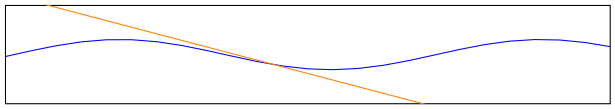
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.312170250193866
0.990000000000000 1.302163154584730
0.999000000000000 1.301184924825476
0.999900000000000 1.301087319931185
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 92$$

over the interval [12,15] on the same graph.

```
>> x = linspace(12,15);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 92$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{92}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{92}{x}$.

f.m

```
function y = f(x)
                                    ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -3.755102040816318
0.010000000000000 -3.687374749499027
0.001000000000000 -3.680736147231300
0.000100000000000 -3.680073601479704
0.000010000000000
```

**10**. Find $R_2$, the Regular Right Sum with 2 rectangles, in order to approximate

$$\int_5^{14} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

**2020 Fall Math 229 Final - Due 12.18 Friday**

# Checchi,David

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

5.0000 6.8000 8.6000 10.4000 12.2000 14.0000
```

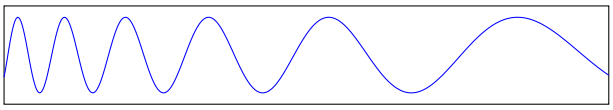
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

5.0000 6.8000 8.6000 10.4000 12.2000 14.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [5,14]

$$y = \sin^2 \frac{139}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 139 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6970 + 1.1935i
1.6970 - 1.1935i
-0.5792 + 1.9315i
-0.5792 - 1.9315i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{139 \arccos x}{100\sqrt{1-x}}$$

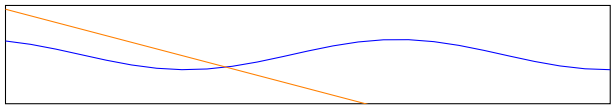
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.982518095401601
0.990000000000000 1.967398679209538
0.999000000000000 1.965920701638491
0.999900000000000 1.965773233374290
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 139$$

over the interval [19,22] on the same graph.

```
>> x = linspace(19,22);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 139$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{139}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{139}{x}$.

f.m

```
function y = f(x)
                                   ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -5.673469387755077
0.010000000000000 -5.571142284568963
0.001000000000000 -5.561112222444819
0.000100000000000 -5.560111202207451
0.000010000000000
```

**10**. Find $R_5$, the Regular Right Sum with 5 rectangles, in order to approximate

$$\int_5^{14} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

**2020 Fall Math 229 Final - Due 12.18 Friday**

# Chen,Haoying

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

4.0000 7.0000 10.0000 13.0000 16.0000
```

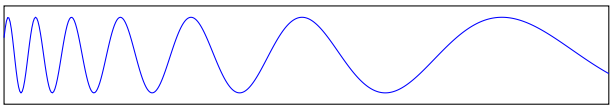
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

4.0000 7.0000 10.0000 13.0000 16.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [4,16]

$$y = \sin^2 \frac{109}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 109 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6190 + 1.1367i
1.6190 - 1.1367i
-0.5494 + 1.8396i
-0.5494 - 1.8396i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{109 \arccos x}{100\sqrt{1-x}}$$

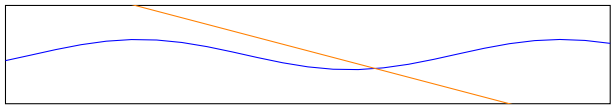
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.554636492077515
0.990000000000000 1.542780259236257
0.999000000000000 1.541621269630184
0.999900000000000 1.541505629048904
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 109$$

over the interval [14,17] on the same graph.

```
>> x = linspace(14,17);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 109$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{109}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{109}{x}$.

f.m

```
function y = f(x)
                                   ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -4.448979591836704
0.010000000000000 -4.368737474949568
0.001000000000000 -4.360872174434149
0.000100000000000 -4.360087201717987
0.000010000000000
```

**10**. Find $R_4$, the Regular Right Sum with 4 rectangles, in order to approximate

$$\int_4^{16} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

**2020 Fall Math 229 Final - Due 12.18 Friday**

# Fazio,Greg T

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

4.0000 7.7500 11.5000 15.2500 19.0000
```

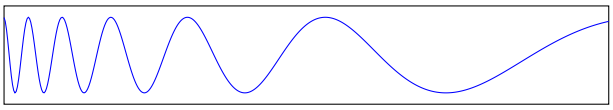
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

4.0000 7.7500 11.5000 15.2500 19.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [4,19]

$$y = \sin^2 \frac{94}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 94 = 0$.

```
>> format short
>> roots(                              )

ans =

1.5733 + 1.1035i
1.5733 - 1.1035i
-0.5320 + 1.7858i
-0.5320 - 1.7858i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{94 \arccos x}{100\sqrt{1-x}}$$

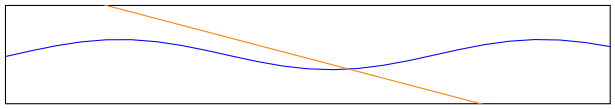
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.340695690415471
0.990000000000000 1.330471049249616
0.999000000000000 1.329471553626030
0.999900000000000 1.329371826886210
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 94$$

over the interval [12,15] on the same graph.

```
>> x = linspace(12,15);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 94$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{94}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{94}{x}$.

f.m

```
function y = f(x)
                                    ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -3.836734693877517
0.010000000000000 -3.767535070140226
0.001000000000000 -3.760752150430590
0.000100000000000 -3.760075201491019
0.000010000000000
```

**10**. Find $R_4$, the Regular Right Sum with 4 rectangles, in order to approximate

$$\int_4^{19} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

**2020 Fall Math 229 Final - Due 12.18 Friday**

# Ganaway,Reese A

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

8.0000 10.7500 13.5000 16.2500 19.0000
```

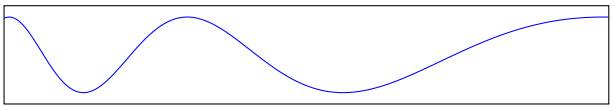
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>      :      :      

ans =

8.0000 10.7500 13.5000 16.2500 19.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [8,19]

$$y = \sin^2 \frac{89}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 89 = 0$.

```
>> format short
>> roots(                          )

ans =

1.5568 + 1.0914i
1.5568 - 1.0914i
-0.5257 + 1.7663i
-0.5257 - 1.7663i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{89 \arccos x}{100\sqrt{1-x}}$$

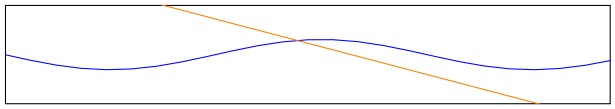
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.269382089861457
0.990000000000000 1.259701312587402
0.999000000000000 1.258754981624645
0.999900000000000 1.258660559498646
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 89$$

over the interval [11,14] on the same graph.

```
>> x = linspace(11,14);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 89$ to 1 decimal place.

$x =$ 

## Let $f(x) = \dfrac{89}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{89}{x}$.

f.m

```
function y = f(x)
                                   ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -3.632653061224467
0.010000000000000 -3.567134268536875
0.001000000000000 -3.560712142430588
0.000100000000000 -3.560071201391679
0.000010000000000
```

**10**. Find $R_4$, the Regular Right Sum with 4 rectangles, in order to approximate

$$\int_8^{19} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

**2020 Fall Math 229 Final - Due 12.18 Friday**

# Gavilanes,Anthony Brando

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

7.0000 7.6000 8.2000 8.8000 9.4000 10.0000
```

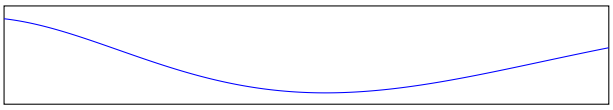
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>      :      :

ans =

7.0000 7.6000 8.2000 8.8000 9.4000 10.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [7,10]

$$y = \sin^2 \frac{54}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 54 = 0$.

```
>> format short
>> roots(                              )

ans =

1.4140 + 0.9873i
1.4140 - 0.9873i
-0.4711 + 1.5978i
-0.4711 - 1.5978i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{54 \arccos x}{100\sqrt{1-x}}$$

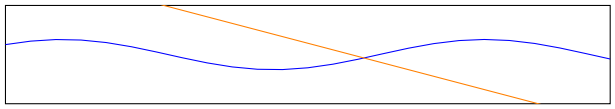
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 0.770186885983356
0.990000000000000 0.764313155951907
0.999000000000000 0.763738977614953
0.999900000000000 0.763681687785695
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 54$$

over the interval [6,9] on the same graph.

```
>> x = linspace( 6,9 );
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 54$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{54}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{54}{x}$.

f.m

```
function y = f(x)
                                    ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -2.204081632653043
0.010000000000000 -2.164328657314484
0.001000000000000 -2.160432086418140
0.000100000000000 -2.160043200856165
0.000010000000000
```

**10**. Find $R_5$, the Regular Right Sum with 5 rectangles, in order to approximate

$$\int_7^{10} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

**2020 Fall Math 229 Final - Due 12.18 Friday**

# Jaundoo,Martin Aaron

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

6.0000 8.2000 10.4000 12.6000 14.8000 17.0000
```

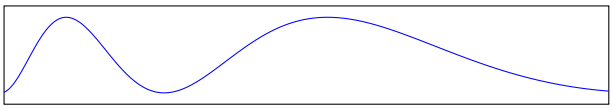
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

6.0000 8.2000 10.4000 12.6000 14.8000 17.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [6,17]

$$y = \sin^2 \frac{56}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 56 = 0$.

```
>> format short
>> roots(                          )

ans =

1.4239 + 0.9945i
1.4239 - 0.9945i
-0.4749 + 1.6096i
-0.4749 - 1.6096i
            + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{56 \arccos x}{100\sqrt{1-x}}$$

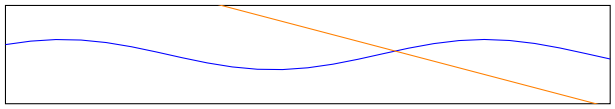
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 0.798712326204962
0.990000000000000 0.792621050616792
0.999000000000000 0.792025606415507
0.999900000000000 0.791966194740721
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 56$$

over the interval [6,9] on the same graph.

```
>> x = linspace( 6,9 );
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 56$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{56}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{56}{x}$.

f.m

```
function y = f(x)
                                   ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -2.285714285714278
0.010000000000000 -2.244488977955860
0.001000000000000 -2.240448089619206
0.000100000000000 -2.240044800903007
0.000010000000000
```

**10**. Find $R_5$, the Regular Right Sum with 5 rectangles, in order to approximate

$$\int_6^{17} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

# 2020 Fall Math 229 Final - Due 12.18 Friday

# Kazmi,Maha

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

5.0000 10.5000 16.0000
```

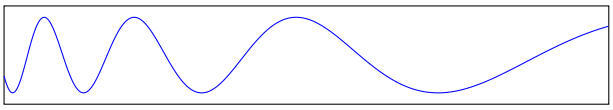
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

5.0000 10.5000 16.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [5,16]

$$y = \sin^2 \frac{81}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 81 = 0$.

```
>> format short
>> roots(                              )

ans =

1.5288 + 1.0710i
1.5288 - 1.0710i
-0.5149 + 1.7333i
-0.5149 - 1.7333i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{81 \arccos x}{100\sqrt{1-x}}$$

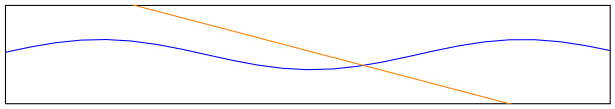
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.155280328975034
0.990000000000000 1.146469733927860
0.999000000000000 1.145608466422430
0.999900000000000 1.145522531678543
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 81$$

over the interval [10,13] on the same graph.

```
>> x = linspace(10,13);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 81$ to 1 decimal place.

$x =$

## Let $f(x) = \frac{81}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \frac{81}{x}$.

f.m

```
function y = f(x)
                                    ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -3.306122448979600
0.010000000000000 -3.246492985972082
0.001000000000000 -3.240648129626321
0.000100000000000 -3.240064801310893
0.000010000000000
```

**10**. Find $R_2$, the Regular Right Sum with 2 rectangles, in order to approximate

$$\int_5^{16} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

# 2020 Fall Math 229 Final - Due 12.18 Friday

# Khan,Ahsan

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

6.0000 7.0000 8.0000 9.0000 10.0000 11.0000
```

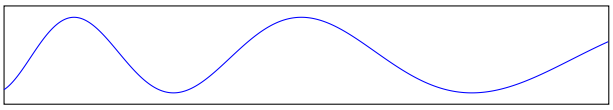
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

6.0000 7.0000 8.0000 9.0000 10.0000 11.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [6,11]

$$y = \sin^2 \frac{93}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 93 = 0$.

```
>> format short
>> roots(                              )

ans =

1.5701 + 1.1011i
1.5701 - 1.1011i
-0.5307 + 1.7819i
-0.5307 - 1.7819i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{93 \arccos x}{100\sqrt{1-x}}$$

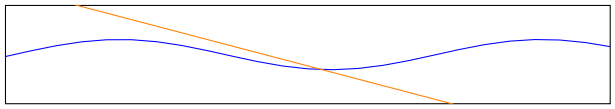
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.326432970304668
0.990000000000000 1.316317101917173
0.999000000000000 1.315328239225753
0.999900000000000 1.315229573408697
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 93$$

over the interval [12,15] on the same graph.

```
>> x = linspace(12,15);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 93$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{93}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{93}{x}$.

f.m

```
function y = f(x)
                                    ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -3.795918367346900
0.010000000000000 -3.727454909819271
0.001000000000000 -3.720744148829168
0.000100000000000 -3.720074401449835
0.000010000000000
```

**10**. Find $R_5$, the Regular Right Sum with 5 rectangles, in order to approximate

$$\int_6^{11} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

# 2020 Fall Math 229 Final - Due 12.18 Friday

# Krawiec,Eryk

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

5.0000 11.5000 18.0000
```

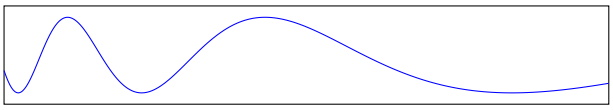
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

5.0000 11.5000 18.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [5,18]

$$y = \sin^2 \frac{50}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 50 = 0$.

```
>> format short
>> roots(                              )

ans =

1.3932 + 0.9721i
1.3932 - 0.9721i
-0.4632 + 1.5734i
-0.4632 - 1.5734i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{50 \arccos x}{100\sqrt{1-x}}$$

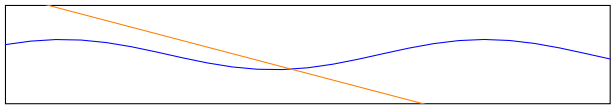
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 0.713136005540144
0.990000000000000 0.707697366622136
0.999000000000000 0.707165720013846
0.999900000000000 0.707112673875644
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 50$$

over the interval [6,9] on the same graph.

```
>> x = linspace( 6,9 );
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 50$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{50}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{50}{x}$.

f.m

```
function y = f(x)
                                    ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -2.040816326530610
0.010000000000000 -2.004008016032088
0.001000000000000 -2.000400080016007
0.000100000000000 -2.000040000798009
0.000010000000000
```

**10**. Find $R_2$, the Regular Right Sum with 2 rectangles, in order to approximate

$$\int_5^{18} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

**2020 Fall Math 229 Final - Due 12.18 Friday**

# Lambert,Ashley

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(        ,        ,        )

ans =

8.0000 8.4000 8.8000 9.2000 9.6000 10.0000
```

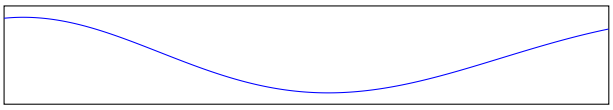
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>         :        :

ans =

8.0000 8.4000 8.8000 9.2000 9.6000 10.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [8,10]

$$y = \sin^2 \frac{114}{x}$$

```
>> x = linspace(        ,        ,1000);
>> y =                                  ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 114 = 0$.

```
>> format short
>> roots(                              )

ans =

1.6331 + 1.1470i
1.6331 - 1.1470i
-0.5548 + 1.8562i
-0.5548 - 1.8562i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{114 \arccos x}{100\sqrt{1-x}}$$

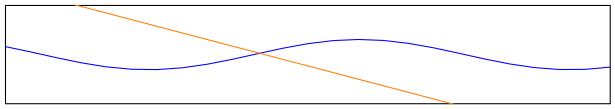
```
>> format long
>> x =                                  ;
>> y =                                  ;
>> [x;y]'

ans =

0.900000000000000 1.625950092631529
0.990000000000000 1.613549995898470
0.999000000000000 1.612337841631569
0.999900000000000 1.612216896436468
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 114$$

over the interval [15,18] on the same graph.

```
>> x = linspace(15,18);
>> f =                                  ;
>> g =                                  ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 114$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{114}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{114}{x}$.

f.m

```
function y = f(x)
                                        ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =          ;
>> h =                                  ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -4.653061224489790
0.010000000000000 -4.569138276552919
0.001000000000000 -4.560912182437703
0.000100000000000 -4.560091201817328
0.000010000000000
```

**10**. Find $R_5$, the Regular Right Sum with 5 rectangles, in order to approximate

$$\int_8^{10} f(x)\,dx$$

```
>> format short
>> clear f
>> a =          ;
>> b =          ;
>> n =          ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

**2020 Fall Math 229 Final - Due 12.18 Friday**

# Lawal,Ishaq M

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

7.0000 11.5000 16.0000
```

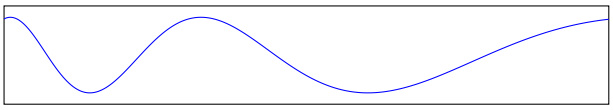
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>      :      :

ans =

7.0000 11.5000 16.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [7,16]

$$y = \sin^2 \frac{78}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 78 = 0$.

```
>> format short
>> roots(                              )

ans =

1.5177 + 1.0629i
1.5177 - 1.0629i
-0.5107 + 1.7202i
-0.5107 - 1.7202i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{78 \arccos x}{100\sqrt{1-x}}$$

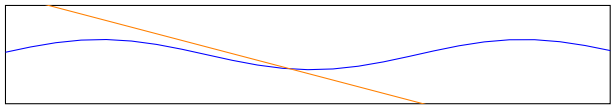
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.112492168642625
0.990000000000000 1.104007891930532
0.999000000000000 1.103178523221599
0.999900000000000 1.103095771246005
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 78$$

over the interval [10,13] on the same graph.

```
>> x = linspace(10,13);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 78$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{78}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{78}{x}$.

f.m

```
function y = f(x)
                                    ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =          ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -3.183673469387749
0.010000000000000 -3.126252505009929
0.001000000000000 -3.120624124825610
0.000100000000000 -3.120062401240630
0.000010000000000
```

**10**. Find $R_2$, the Regular Right Sum with 2 rectangles, in order to approximate

$$\int_7^{16} f(x)\,dx$$

```
>> format short
>> clear f
>> a =          ;
>> b =          ;
>> n =          ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

**2020 Fall Math 229 Final - Due 12.18 Friday**

# Mercedes,Janyah

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

9.0000 9.2500 9.5000 9.7500 10.0000
```

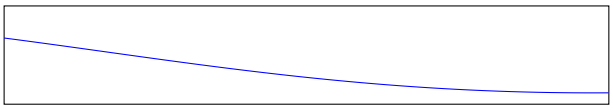
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :      

ans =

9.0000 9.2500 9.5000 9.7500 10.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [9,10]

$$y = \sin^2 \frac{94}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 94 = 0$.

```
>> format short
>> roots(                          )

ans =

1.5733 + 1.1035i
1.5733 - 1.1035i
-0.5320 + 1.7858i
-0.5320 - 1.7858i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{94 \arccos x}{100\sqrt{1-x}}$$

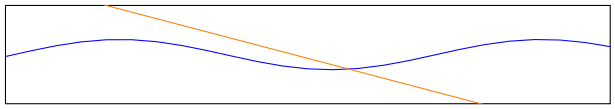
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.340695690415471
0.990000000000000 1.330471049249616
0.999000000000000 1.329471553626030
0.999900000000000 1.329371826886210
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 94$$

over the interval [12,15] on the same graph.

```
>> x = linspace(12,15);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 94$ to 1 decimal place.

$x =$ 

## Let $f(x) = \dfrac{94}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{94}{x}$.

f.m

```
function y = f(x)
                                   ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -3.836734693877517
0.010000000000000 -3.767535070140226
0.001000000000000 -3.760752150430590
0.000100000000000 -3.760075201491019
0.000010000000000
```

**10**. Find $R_4$, the Regular Right Sum with 4 rectangles, in order to approximate

$$\int_9^{10} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

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# Nyong,Daniel Eno

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

9.0000 13.5000 18.0000
```

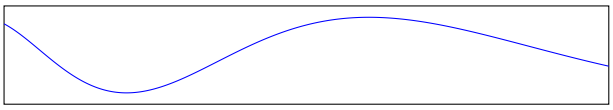
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>      :      :

ans =

9.0000 13.5000 18.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [9,18]

$$y = \sin^2 \frac{68}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 68 = 0$.

```
>> format short
>> roots(                          )

ans =

1.4781 + 1.0340i
1.4781 - 1.0340i
-0.4956 + 1.6735i
-0.4956 - 1.6735i
            + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{68 \arccos x}{100\sqrt{1-x}}$$

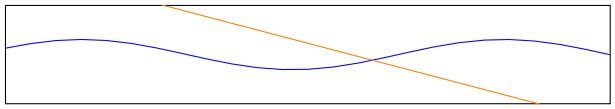
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 0.969864967534596
0.990000000000000 0.962468418606105
0.999000000000000 0.961745379218830
0.999900000000000 0.961673236470876
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 68$$

over the interval [8,11] on the same graph.

```
>> x = linspace( 8,11 );
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 68$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{68}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{68}{x}$.

f.m

```
function y = f(x)
                                   ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -2.775510204081630
0.010000000000000 -2.725450901803583
0.001000000000000 -2.720544108823830
0.000100000000000 -2.720054401077476
0.000010000000000
```

**10**. Find $R_2$, the Regular Right Sum with 2 rectangles, in order to approximate

$$\int_9^{18} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

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# Pasquale,Steven Michael

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

9.0000 9.8000 10.6000 11.4000 12.2000 13.0000
```

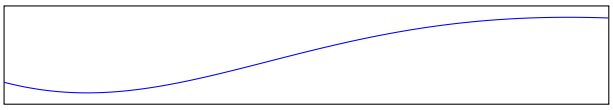
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

9.0000 9.8000 10.6000 11.4000 12.2000 13.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [9,13]

$$y = \sin^2 \frac{60}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 60 = 0$.

```
>> format short
>> roots(                          )

ans =

1.4429 + 1.0084i
1.4429 - 1.0084i
-0.4822 + 1.6320i
-0.4822 - 1.6320i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{60 \arccos x}{100\sqrt{1-x}}$$

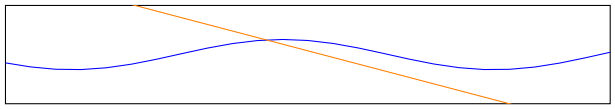
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 0.855763206648173
0.990000000000000 0.849236839946563
0.999000000000000 0.848598864016615
0.999900000000000 0.848535208650773
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 60$$

over the interval [7,10] on the same graph.

```
>> x = linspace( 7,10 );
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 60$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{60}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{60}{x}$.

f.m

```
function y = f(x)
                                   ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -2.448979591836729
0.010000000000000 -2.404809619238435
0.001000000000000 -2.400480096019563
0.000100000000000 -2.400048000961163
0.000010000000000
```

**10**. Find $R_5$, the Regular Right Sum with 5 rectangles, in order to approximate

$$\int_9^{13} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

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# Peleshenko,Oksana

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

6.0000 8.4000 10.8000 13.2000 15.6000 18.0000
```

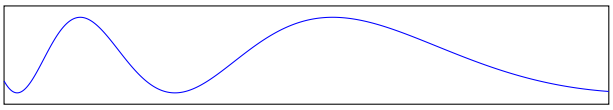
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

6.0000 8.4000 10.8000 13.2000 15.6000 18.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [6,18]

$$y = \sin^2 \frac{59}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 59 = 0$.

```
>> format short
>> roots(                              )

ans =

1.4383 + 1.0050i
1.4383 - 1.0050i
-0.4804 + 1.6265i
-0.4804 - 1.6265i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{59 \arccos x}{100\sqrt{1-x}}$$

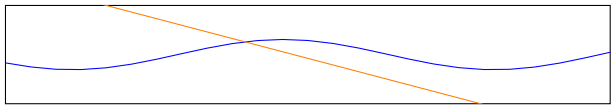
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 0.841500486537370
0.990000000000000 0.835082892614121
0.999000000000000 0.834455549616338
0.999900000000000 0.834392955173260
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 59$$

over the interval [7,10] on the same graph.

```
>> x = linspace( 7,10 );
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 59$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{59}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{59}{x}$.

f.m

```
function y = f(x)
                                    ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =          ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -2.408163265306111
0.010000000000000 -2.364729458917658
0.001000000000000 -2.360472094418142
0.000100000000000 -2.360047200937742
0.000010000000000
```

**10**. Find $R_5$, the Regular Right Sum with 5 rectangles, in order to approximate

$$\int_6^{18} f(x)\,dx$$

```
>> format short
>> clear f
>> a =          ;
>> b =          ;
>> n =          ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

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# Rosales,Gustavo

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

7.0000 9.5000 12.0000 14.5000 17.0000
```

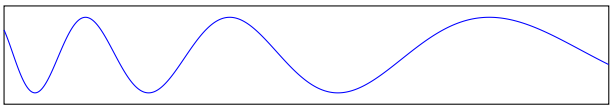
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

7.0000 9.5000 12.0000 14.5000 17.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [7,17]

$$y = \sin^2 \frac{118}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 118 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6440 + 1.1550i
1.6440 - 1.1550i
-0.5589 + 1.8691i
-0.5589 - 1.8691i
            + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{118 \arccos x}{100\sqrt{1-x}}$$

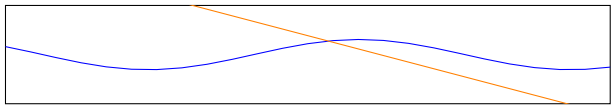
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.683000973074741
0.990000000000000 1.670165785228241
0.999000000000000 1.668911099232676
0.999900000000000 1.668785910346519
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 118$$

over the interval [15,18] on the same graph.

```
>> x = linspace(15,18);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 118$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{118}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{118}{x}$.

f.m

```
function y = f(x)
                                   ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =          ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -4.816326530612223
0.010000000000000 -4.729458917835315
0.001000000000000 -4.720944188836284
0.000100000000000 -4.720094401875484
0.000010000000000
```

**10**. Find $R_4$, the Regular Right Sum with 4 rectangles, in order to approximate

$$\int_7^{17} f(x)\,dx$$

```
>> format short
>> clear f
>> a =          ;
>> b =          ;
>> n =          ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

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# Sanusi,Babajide Habib

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

6.0000 9.2500 12.5000 15.7500 19.0000
```

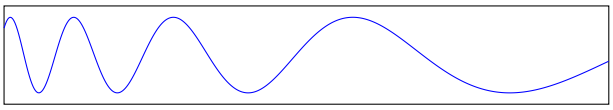
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

6.0000 9.2500 12.5000 15.7500 19.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [6,19]

$$y = \sin^2 \frac{106}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 106 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6103 + 1.1304i
1.6103 - 1.1304i
-0.5461 + 1.8293i
-0.5461 - 1.8293i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{106 \arccos x}{100\sqrt{1-x}}$$

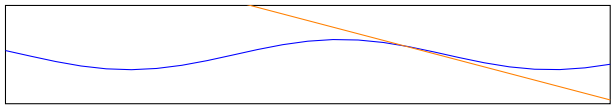
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.511848331745106
0.990000000000000 1.500318417238929
0.999000000000000 1.499191326429353
0.999900000000000 1.499078868616365
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 106$$

over the interval [13,16] on the same graph.

```
>> x = linspace(13,16);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 106$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{106}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{106}{x}$.

f.m

```
function y = f(x)
                                   ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =          ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -4.326530612244888
0.010000000000000 -4.248496993988126
0.001000000000000 -4.240848169636990
0.000100000000000 -4.240084801701015
0.000010000000000
```

**10**. Find $R_4$, the Regular Right Sum with 4 rectangles, in order to approximate

$$\int_6^{19} f(x)\,dx$$

```
>> format short
>> clear f
>> a =          ;
>> b =          ;
>> n =          ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

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# Shablovsky,Jason

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

5.0000 8.0000 11.0000
```

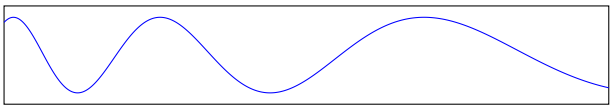
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

5.0000 8.0000 11.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [5,11]

$$y = \sin^2 \frac{72}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 72 = 0$.

```
>> format short
>> roots(                          )

ans =

1.4945 + 1.0460i
1.4945 - 1.0460i
-0.5018 + 1.6928i
-0.5018 - 1.6928i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{72 \arccos x}{100\sqrt{1-x}}$$

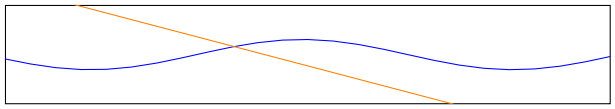
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.026915847977808
0.990000000000000 1.019084207935876
0.999000000000000 1.018318636819938
0.999900000000000 1.018242250380927
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 72$$

over the interval [9,12] on the same graph.

```
>> x = linspace( 9,12 );
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 72$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{72}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{72}{x}$.

f.m

```
function y = f(x)
                                   ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -2.938775510204064
0.010000000000000 -2.885771543086157
0.001000000000000 -2.880576115224186
0.000100000000000 -2.880057601135632
0.000010000000000
```

**10**. Find $R_2$, the Regular Right Sum with 2 rectangles, in order to approximate

$$\int_5^{11} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

# 2020 Fall Math 229 Final - Due 12.18 Friday

# Shaheen,Hina

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

4.0000 6.8000 9.6000 12.4000 15.2000 18.0000
```

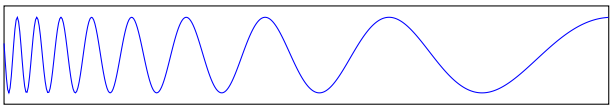
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

4.0000 6.8000 9.6000 12.4000 15.2000 18.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [4,18]

$$y = \sin^2 \frac{142}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 142 = 0$.

```
>> format short
>> roots(                          )

ans =

1.7040 + 1.1987i
1.7040 - 1.1987i
-0.5818 + 1.9398i
-0.5818 - 1.9398i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{142 \arccos x}{100\sqrt{1-x}}$$

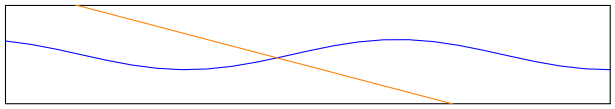
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 2.025306255734010
0.990000000000000 2.009860521206867
0.999000000000000 2.008350644839322
0.999900000000000 2.008199993806829
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 142$$

over the interval [19,22] on the same graph.

```
>> x = linspace(19,22);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 142$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{142}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{142}{x}$.

f.m

```
function y = f(x)
                                   ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -5.795918367346928
0.010000000000000 -5.691382765531116
0.001000000000000 -5.681136227249082
0.000100000000000 -5.680113602259950
0.000010000000000
```

**10**. Find $R_5$, the Regular Right Sum with 5 rectangles, in order to approximate

$$\int_4^{18} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

**2020 Fall Math 229 Final - Due 12.18 Friday**

# Shalodi,Majd

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

4.0000 5.2000 6.4000 7.6000 8.8000 10.0000
```

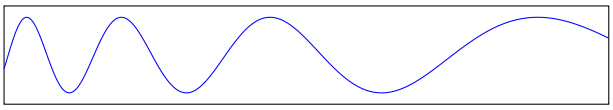
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

4.0000 5.2000 6.4000 7.6000 8.8000 10.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [4,10]

$$y = \sin^2 \frac{73}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 73 = 0$.

```
>> format short
>> roots(                          )

ans =

1.4984 + 1.0489i
1.4984 - 1.0489i
-0.5034 + 1.6975i
-0.5034 - 1.6975i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{73 \arccos x}{100\sqrt{1-x}}$$

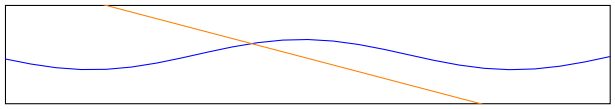
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.041178568088611
0.990000000000000 1.033238155268319
0.999000000000000 1.032461951220215
0.999900000000000 1.032384503858440
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 73$$

over the interval [9,12] on the same graph.

```
>> x = linspace( 9,12 );
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 73$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{73}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{73}{x}$.

f.m

```
function y = f(x)
                                   ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -2.979591836734681
0.010000000000000 -2.925851703406756
0.001000000000000 -2.920584116823831
0.000100000000000 -2.920058401159053
0.000010000000000
```

**10**. Find $R_5$, the Regular Right Sum with 5 rectangles, in order to approximate

$$\int_4^{10} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

**2020 Fall Math 229 Final - Due 12.18 Friday**

# Shenouda,Andrew

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

6.0000 6.8000 7.6000 8.4000 9.2000 10.0000
```

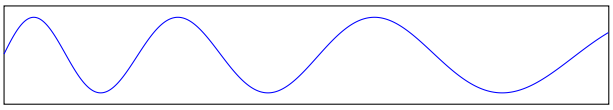
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :      

ans =

6.0000 6.8000 7.6000 8.4000 9.2000 10.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [6,10]

$$y = \sin^2 \frac{146}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 146 = 0$.

```
>> format short
>> roots(                              )

ans =

1.7132 + 1.2054i
1.7132 - 1.2054i
-0.5854 + 1.9506i
-0.5854 - 1.9506i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{146 \arccos x}{100\sqrt{1-x}}$$

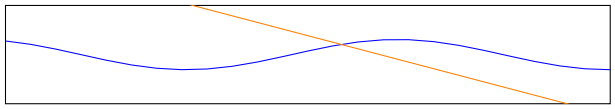
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 2.082357136177222
0.990000000000000 2.066476310536637
0.999000000000000 2.064923902440429
0.999900000000000 2.064769007716880
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 146$$

over the interval [19,22] on the same graph.

```
>> x = linspace(19,22);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 146$ to 1 decimal place.

$x =$ 

## Let $f(x) = \dfrac{146}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{146}{x}$.

f.m

```
function y = f(x)
                                    ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -5.959183673469362
0.010000000000000 -5.851703406813512
0.001000000000000 -5.841168233647663
0.000100000000000 -5.840116802318106
0.000010000000000
```

**10**. Find $R_5$, the Regular Right Sum with 5 rectangles, in order to approximate

$$\int_6^{10} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

**2020 Fall Math 229 Final - Due 12.18 Friday**

# Stepanova,Maria

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

6.0000 8.0000 10.0000
```

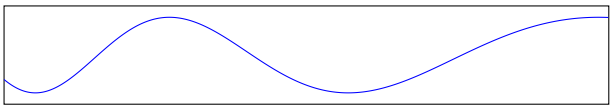
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>      :      :

ans =

6.0000 8.0000 10.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [6,10]

$$y = \sin^2 \frac{78}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 78 = 0$.

```
>> format short
>> roots(                              )

ans =

1.5177 + 1.0629i
1.5177 - 1.0629i
-0.5107 + 1.7202i
-0.5107 - 1.7202i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{78 \arccos x}{100\sqrt{1-x}}$$

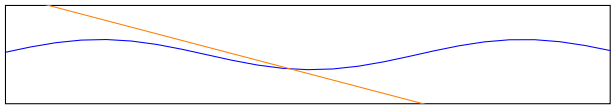
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.112492168642625
0.990000000000000 1.104007891930532
0.999000000000000 1.103178523221599
0.999900000000000 1.103095771246005
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 78$$

over the interval [10,13] on the same graph.

```
>> x = linspace(10,13);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 78$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{78}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{78}{x}$.

f.m

```
function y = f(x)
                                    ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -3.183673469387749
0.010000000000000 -3.126252505009929
0.001000000000000 -3.120624124825610
0.000100000000000 -3.120062401240630
0.000010000000000
```

**10**. Find $R_2$, the Regular Right Sum with 2 rectangles, in order to approximate

$$\int_6^{10} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

**2020 Fall Math 229 Final - Due 12.18 Friday**

# Suffiullah,Muhammad

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

7.0000 8.2000 9.4000 10.6000 11.8000 13.0000
```

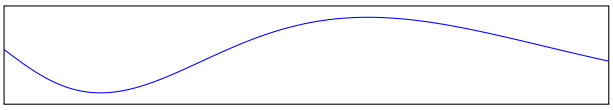
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :      

ans =

7.0000 8.2000 9.4000 10.6000 11.8000 13.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [7,13]

$$y = \sin^2 \frac{50}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 50 = 0$.

```
>> format short
>> roots(                          )

ans =

1.3932 + 0.9721i
1.3932 - 0.9721i
-0.4632 + 1.5734i
-0.4632 - 1.5734i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{50 \arccos x}{100\sqrt{1-x}}$$

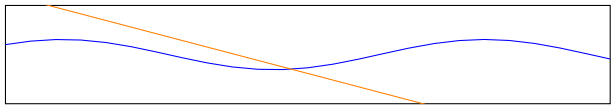
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 0.713136005540144
0.990000000000000 0.707697366622136
0.999000000000000 0.707165720013846
0.999900000000000 0.707112673875644
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 50$$

over the interval [6,9] on the same graph.

```
>> x = linspace( 6,9 );
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 50$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{50}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{50}{x}$.

f.m

```
function y = f(x)
                                   ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -2.040816326530610
0.010000000000000 -2.004008016032088
0.001000000000000 -2.000400080016007
0.000100000000000 -2.000040000798009
0.000010000000000
```

**10**. Find $R_5$, the Regular Right Sum with 5 rectangles, in order to approximate

$$\int_7^{13} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

**2020 Fall Math 229 Final - Due 12.18 Friday**

# Thomas,Michael A

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

4.0000 7.2500 10.5000 13.7500 17.0000
```

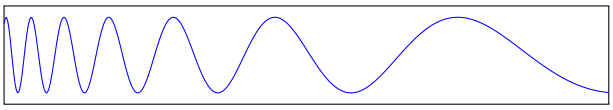
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>      :      :

ans =

4.0000 7.2500 10.5000 13.7500 17.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [4,17]

$$y = \sin^2 \frac{108}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 108 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6161 + 1.1346i
1.6161 - 1.1346i
-0.5483 + 1.8362i
-0.5483 - 1.8362i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{108 \arccos x}{100\sqrt{1-x}}$$

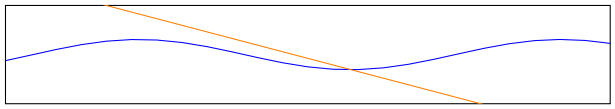
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.540373771966712
0.990000000000000 1.528626311903814
0.999000000000000 1.527477955229907
0.999900000000000 1.527363375571391
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 108$$

over the interval [14,17] on the same graph.

```
>> x = linspace(14,17);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 108$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{108}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{108}{x}$.

f.m

```
function y = f(x)
                                   ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -4.408163265306086
0.010000000000000 -4.328657314628969
0.001000000000000 -4.320864172836280
0.000100000000000 -4.320086401712330
0.000010000000000
```

**10**. Find $R_4$, the Regular Right Sum with 4 rectangles, in order to approximate

$$\int_4^{17} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

# 2020 Fall Math 229 Final - Due 12.18 Friday

# Wu,Jiamin

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

8.0000 9.5000 11.0000
```

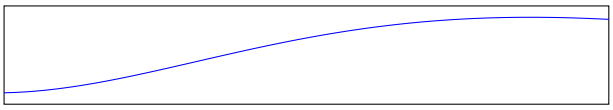
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>      :      :

ans =

8.0000 9.5000 11.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [8,11]

$$y = \sin^2 \frac{50}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 50 = 0$.

```
>> format short
>> roots(                          )

ans =

1.3932 + 0.9721i
1.3932 - 0.9721i
-0.4632 + 1.5734i
-0.4632 - 1.5734i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{50 \arccos x}{100\sqrt{1-x}}$$

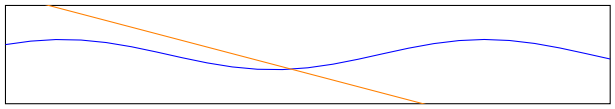
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 0.713136005540144
0.990000000000000 0.707697366622136
0.999000000000000 0.707165720013846
0.999900000000000 0.707112673875644
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 50$$

over the interval [6,9] on the same graph.

```
>> x = linspace( 6,9 );
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 50$ to 1 decimal place.

$x =$

## Let $f(x) = \frac{50}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \frac{50}{x}$.

f.m

```
function y = f(x)
                                ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -2.040816326530610
0.010000000000000 -2.004008016032088
0.001000000000000 -2.000400080016007
0.000100000000000 -2.000040000798009
0.000010000000000
```

**10**. Find $R_2$, the Regular Right Sum with 2 rectangles, in order to approximate

$$\int_8^{11} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

# 2020 Fall Math 229 Final - Due 12.18 Friday

# Xie,Miaoqin

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

9.0000 10.0000 11.0000
```

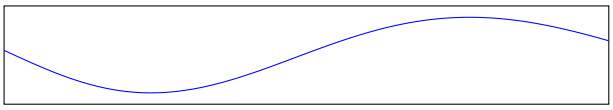
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

9.0000 10.0000 11.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [9,11]

$$y = \sin^2 \frac{149}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 149 = 0$.

```
>> format short
>> roots(                              )

ans =

1.7199 + 1.2103i
1.7199 - 1.2103i
-0.5879 + 1.9586i
-0.5879 - 1.9586i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{149 \arccos x}{100\sqrt{1-x}}$$

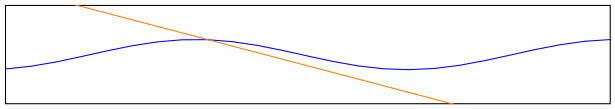
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 2.125145296509630
0.990000000000000 2.108938152533966
0.999000000000000 2.107353845641261
0.999900000000000 2.107195768149419
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 149$$

over the interval [20,23] on the same graph.

```
>> x = linspace(20,23);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 149$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{149}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{149}{x}$.

f.m

```
function y = f(x)
                                    ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =          ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -6.081632653061213
0.010000000000000 -5.971943887775310
0.001000000000000 -5.961192238448374
0.000100000000000 -5.960119202370605
0.000010000000000
```

**10**. Find $R_2$, the Regular Right Sum with 2 rectangles, in order to approximate

$$\int_9^{11} f(x)\,dx$$

```
>> format short
>> clear f
>> a =          ;
>> b =          ;
>> n =          ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

**2020 Fall Math 229 Final - Due 12.18 Friday**

# Zaalishvili,Alex

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

8.0000 10.0000 12.0000 14.0000 16.0000
```

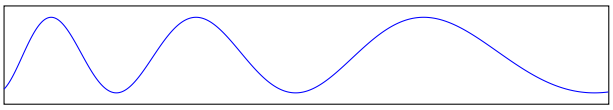
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :      

ans =

8.0000 10.0000 12.0000 14.0000 16.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [8,16]

$$y = \sin^2 \frac{149}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 149 = 0$.

```
>> format short
>> roots(                          )

ans =

1.7199 + 1.2103i
1.7199 - 1.2103i
-0.5879 + 1.9586i
-0.5879 - 1.9586i
            + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{149 \arccos x}{100\sqrt{1-x}}$$

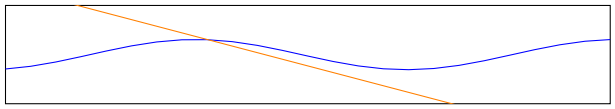
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 2.125145296509630
0.990000000000000 2.108938152533966
0.999000000000000 2.107353845641261
0.999900000000000 2.107195768149419
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 149$$

over the interval [20,23] on the same graph.

```
>> x = linspace(20,23);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 149$ to 1 decimal place.

$x =$ 

## Let $f(x) = \dfrac{149}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{149}{x}$.

f.m

```
function y = f(x)
                                   ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =        ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -6.081632653061213
0.010000000000000 -5.971943887775310
0.001000000000000 -5.961192238448374
0.000100000000000 -5.960119202370605
0.000010000000000
```

**10**. Find $R_4$, the Regular Right Sum with 4 rectangles, in order to approximate

$$\int_8^{16} f(x)\,dx$$

```
>> format short
>> clear f
>> a =        ;
>> b =        ;
>> n =        ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```

**2020 Fall Math 229 Final - Due 12.18 Friday**

# Zaidi,Qumber

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(        ,        ,        )

ans =

8.0000 10.5000 13.0000 15.5000 18.0000
```

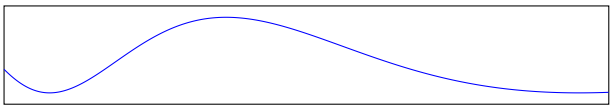
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>         :        :        

ans =

8.0000 10.5000 13.0000 15.5000 18.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [8,18]

$$y = \sin^2 \frac{55}{x}$$

```
>> x = linspace(        ,        ,1000);
>> y =                                    ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 55 = 0$.

```
>> format short
>> roots(                              )

ans =

1.4190 + 0.9909i
1.4190 - 0.9909i
-0.4730 + 1.6037i
-0.4730 - 1.6037i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{55 \arccos x}{100\sqrt{1-x}}$$

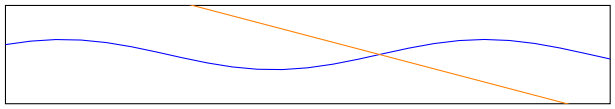
```
>> format long
>> x =                                    ;
>> y =                                    ;
>> [x;y]'

ans =

0.900000000000000 0.784449606094159
0.990000000000000 0.778467103284350
0.999000000000000 0.777882292015230
0.999900000000000 0.777823941263208
0.999990000000000                        
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 55$$

over the interval [6,9] on the same graph.

```
>> x = linspace( 6,9 );
>> f =                                    ;
>> g =                                    ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 55$ to 1 decimal place.

$x =$ 

## Let $f(x) = \dfrac{55}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{55}{x}$.

f.m

```
function y = f(x)
                                        ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =          ;
>> h =                                    ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -2.244897959183660
0.010000000000000 -2.204408817635261
0.001000000000000 -2.200440088017785
0.000100000000000 -2.200044000879586
0.000010000000000                       
```

**10**. Find $R_4$, the Regular Right Sum with 4 rectangles, in order to approximate

$$\int_8^{18} f(x)\,dx$$

```
>> format short
>> clear f
>> a =          ;
>> b =          ;
>> n =          ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =

                
```

**2020 Fall Math 229 Final - Due 12.18 Friday**

# REVIEW SHEET VERSION

**1**. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

9.0000 10.4000 11.8000 13.2000 14.6000 16.0000
```

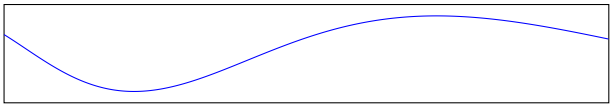
**2**. Fill in the blanks in the MATLAB screenshot.

```
>>      :      :

ans =

9.0000 10.4000 11.8000 13.2000 14.6000 16.0000
```

**3**. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [9,16]

$$y = \sin^2 \frac{66}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



**4**. Find the real solution to $4x^5 - x^4 + 66 = 0$.

```
>> format short
>> roots(                              )

ans =

1.4696 + 1.0279i
1.4696 - 1.0279i
-0.4924 + 1.6635i
-0.4924 - 1.6635i
              + 0.0000i
```

**5**. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{66 \arccos x}{100\sqrt{1-x}}$$

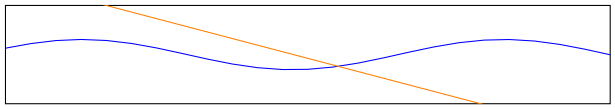
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 0.941339527312991
0.990000000000000 0.934160523941220
0.999000000000000 0.933458750418276
0.999900000000000 0.933388729515850
0.999990000000000
```

**6**. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 66$$

over the interval [8,11] on the same graph.

```
>> x = linspace( 8,11 );
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



**7**. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 66$ to 1 decimal place.

$x =$

## Let $f(x) = \dfrac{66}{x}$ for questions 8, 9, 10

**8**. Make a function file for $f(x) = \dfrac{66}{x}$.

f.m

```
function y = f(x)
                                    ;
```

**9**. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -2.693877551020414
0.010000000000000 -2.645290581162385
0.001000000000000 -2.640528105622763
0.000100000000000 -2.640052801048398
0.000010000000000
```

**10**. Find $R_5$, the Regular Right Sum with 5 rectangles, in order to approximate

$$\int_9^{16} f(x)\,dx$$

```
>> format short
>> clear f
>> a =       ;
>> b =       ;
>> n =       ;
>> w = (b-a)/n;
>> R = w * sum(f(a+[1:n]*w))

R =
```